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INTER-OFFICE CORRESPONDENCE

RICHMOND, VIRGINIA

File

To: Mr. J. E. Wickham ✓ Date: March 15, 1984

From: Farley Dawson

Subject: Coal Strength of Domestic Brands

The average percentage of coals removed from Philip Morris brands and competitive brands are given in Table I. Data on cigarettes manufactured during the period September, 1983 through December, 1983 are compared with the values reported in December, 1983 for cigarettes manufactured during the period May, 1983 through August, 1983. There were no significant changes in coal strength for any of the Lorillard or Liggett brands tested. Changes in coal removal values for several brands of other manufacturers may be related to changes in levels of citrate in paper and in rod densities.

The data were obtained using the standard coal strength procedure which tests 50 millimeters of tobacco rod, regardless of the cigarette length, and allows none of the filter tipping paper to protrude in front of the cigarette holding bar. All cigarettes were equilibrated for at least 24 hours before testing. In most cases, 200 cigarettes per brand were tested, covering a manufacturing period of four months. Differences in coal removal values of greater than 10% (absolute) are considered significant.

Benson & Hedges 100 was the only Philip Morris brand to show a significant change in its coal removal value. Its increase from 47 to 62% is not explained by any changes in other physical parameters.

Three Reynolds brands which showed significant changes were Salem Ultra Lights 85, Salem 85, and Vantage Ultra Lights 85. The coal removal of Salem Ultra Lights 85 increased from 47 to 66%. Beginning in September, this brand experienced a decrease in tobacco weight from 0.631 to 0.592g and a corresponding decrease in density from 0.218 to 0.212 g/cc. Studies indicate that a decrease in rod density correlates with an increased coal removal. Changes in the citrate level of two other Reynolds brands tested were observed. Studies indicate that increases in coal removal may relate to an increase in the level of citrate found in paper. Salem 85 and Vantage Ultra Lights 85 had increases in citrate levels (from 0.6 to 1.6% and 0.4 to 1.4%, respectively) and corresponding increases in coal removal (31 to 52% and 48 to 70%, respectively).

Four American brands, Pall Mall 100, Pall Mall Lights 100, Tareyton 85, and Tareyton Lights 100, showed significant coal removal increases. No changes in the values of physical parameters were observed which might have accounted for these increases.

Viceroy Rich Lights 85 is one Brown & Williamson brand which showed a significant change in coal removal from 42 to 25% . This decrease is not explained by any changes in other cigarette parameters. The addition of expanded tobacco in the blend of the two brands of the Raleigh family tested resulted in decreases in tobacco weights and corresponding decreases in rod densities in the later months of 1983. The decrease in density for Raleigh 100 was from 0.250 to 0.233 g/cc. The December coal removal value for this brand was 56%, its highest level for 1983. Raleigh Lights 100 also had a density decrease from 0.251 to 0.230 g/cc, but in addition had a decrease in the level of citrate in paper from 0.8 to 0.2% towards the end of 1983. It is believed that the first phenomena may result in increased coal removal while the latter may result in decreased coal removal. The coal removal for Raleigh Lights 100 decreased from 44 to 30%.

Several new brands were introduced towards the end of 1983. Results on these brands can be found in Table II. The data were obtained using the procedure described previously. For each brand, 200 cigarettes were tested.

FD:rad

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